GAP RESERVOIR
ENVIRONMENTAL ASSESSMENT
EA OR-27-01-20

BURNS DISTRICT
BUREAU OF LAND MANAGEMENT
28910 HIGHWAY 20 WEST
HINES, OREGON 97738

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CHAPTER I. INTRODUCTION: PURPOSE OF AND NEED FOR ACTION

In an effort to improve livestock and riparian management, and wildlife habitat in the Mud Creek Allotment (6005), Hammond Ranches, Inc., agreed to abandon the largest of three water gaps on Bridge Creek if an alternate source of water would be developed elsewhere in the same pasture. A reservoir, approximately one-half acre in size, is proposed to be built in an unnamed ephemeral stream bed located in uplands approximately three-quarter mile south of Bridge Creek in the Lower Pasture. Location of the proposed reservoir is W.M., T. 32 S., R. 32½ E., Section 3, NENW (see Map 1). The proposed reservoir is not in a Wilderness Study Area (WSA), nor is the affected area within wilderness. The proposed projects are located within the area of the Steens Mountain Cooperative Management and Protection Area (CMPA).

Abandonment of the water gap would permit natural rehabilitation of approximately 300 yards of riparian habitat. This water gap is located in the Bridge Creek WSA in T. 32 S., R. 32½ E., Section NESE. Two water gap fences that span Bridge Creek would be removed. Approximately one-quarter mile of wire fence would be necessary to close off the approach to the water gap, and would connect two other sections of wire fence located on the top of the rim south of Bridge Creek. The proposed section of fence is not in a WSA.

The need for the action is to protect and improve aquatic and riparian habitat and sensitive species. The affected section of Bridge Creek, located in the Bridge Creek WSA (OR-2-87), is a perennial fishery, habitat for Great Basin redband trout and Malheur mottled sculpin which are managed as a Bureau of Land Management (BLM) sensitive species.

This proposal is in conformance with the objectives stated in the1982 Andrews Management Framework Plan, Chapter 1 and Table B-3 of the 1983 Andrews Grazing Management Program Final Environmental Impact Statement (EIS), and Chapter I.B.6 (Enhancing Wilderness Values) of the 1995 Interim Management Policy for Lands Under Wilderness Review.

Access to the proposed projects are warranted and in compliance with the Steens Mountain Cooperative Management and Protection Act of 2000, Section 112(b)(2)(B) which states that motorized vehicles are not prohibited from cross-country travel in the Steens Mountain CMPA if the Secretary determines that such use ". . . is appropriate for the construction or maintenance of agricultural facilities, ..."

CHAPTER II. ALTERNATIVES INCLUDING THE PROPOSED ACTION

A. Proposed Action Alternative

The proposed action is to construct an earth-fill dam 9.8 feet high, 12 feet across the top, and 126 feet long in an unnamed ephemeral tributary of Bridge Creek (see Map 1). The reservoir created by this dam would have a surface area of approximately one-half acre. The dam and spillway would be constructed to Oregon State specifications and a permit to construct would be received prior to construction.

No road would be constructed into the reservoir area. Two dozers, one pulling a 10-yard, rubber-tired, carryall scraper, would be walked to the vicinity of the proposed reservoir using existing ways. Approximately one-quarter mile of cross-country travel would be necessary to reach the proposed project site from the existing way. This route would be traversed two times, once going in, once coming out. The route would be flagged through a crested wheatgrass seeding. Some sagebrush would need to be crossed and would leave a two-track path through the brush. Work would be done in the fall when the ground is hard. The dozer blade would not come in contact with the ground during this cross-country travel. Borrow material for the dam would come from the impoundment area.

The proposal also includes construction of a 4-wire fence approximately one-quarter mile long (see Map 1). The top three wires would be barbed, the bottom wire smooth. The top wire would be 42 inches aboveground and the bottom wire would be 16 inches aboveground. Posts would be steel, painted green, 5½ feet long, set 18 inches into the ground and spaced 22 feet apart. This fence would connect with two existing 4-wire fences and would close off the approach to a water gap in the bottom of Bridge Creek Canyon. The two fences spanning the creek and forming the water gap would be removed.

The location of the proposed fence would be accessed by an existing trail. Approximately 1-mile of cross-country vehicle travel would be necessary to reach the proposed fence construction site. The route would be mostly through crested wheatgrass seeding. Construction materials would be hauled to the location by pickup truck. An All-Terrain Vehicle would be used to scatter materials and string wire. No blading of brush would be allowed.

The two fences spanning the creek and forming the water gap would be removed.

B. No Action Alternative

The no action alternative is the only feasible alternative and involves not enacting the proposed action.

CHAPTER III. AFFECTED ENVIRONMENT

A. Critical Elements

The following chart of critical elements indicates whether or not they are affected by the proposal. Critical elements not affected by the proposal will not be discussed further in this document.

Critical Element	Affected	Not Affected
Areas of Critical Environmental Concern (ACECs)		X
Air Quality		X
Cultural Heritage		X
Environmental Justice		X
Prime or Unique Farmlands		X
Floodplains		X
Hazardous Materials		X
Migratory Birds		X
American Indian Religious Concerns		X
Noxious Weeds	X	
Paleontology		X
T&E Animals		X
T&E Plants		X
Water Quality		X
Wetlands and Riparian Zones	X	
Wild and Scenic Rivers		X
Wilderness and WSAs	X	
Adverse Energy Impact		X

1. Noxious Weeds

There are no known noxious weed sites in the proposed reservoir location, however, noxious weeds (mostly Canada thistle) occur in the water gap along Bridge Creek.

2. Wetlands and Riparian Zones

Bridge Creek would be affected by the proposed action. This reach is in Proper Functioning Condition as analyzed in June 1998. This segment is rock armored with a diverse age class distribution of both woody and hydric plant species. The water gap receives periodic concentrated livestock use that has reduced riparian vegetative cover and bank stability.

3. Wilderness and Wilderness Study Areas

The water gap on Bridge Creek that would be abandoned under the proposed action is in the Bridge Creek WSA. The proposed reservoir and fence are not located in the WSA.

B. Noncritical Elements

The following noncritical elements are discussed and analyzed in this document: Vegetation/Range, Soils, Watershed, Wildlife, Fisheries, Livestock Grazing Management, Recreation, and Visual Resources.

1. Vegetation/Range

The vegetation in the reservoir project area is dominated by western juniper, Wyoming big sagebrush, and an understory of Thurber needlegrass and squirreltail. The vegetation adjacent to the proposed reservoir site, out of the drainage, is part of the Mud Creek wildlife seeding (crested wheatgrass). The proposed section of fence is dominated by Wyoming big sagebrush with an understory of squirreltail and Thurber needlegrass.

2. Soils

The soils of the proposed project sites were mapped by the BLM Ecological Site Inventory crew in 1982. The proposed dam and fence are in soils of the Robson-Fourwheel complex, 3 to 30 percent slopes. This complex supports a Clayey, 10-12 inches precipitation zone range site. Plant association is Wyoming big sagebrush - bluebunch wheatgrass.

The Robson component is a gravelly clay, well-drained, shallow soil with hard bedrock occurring within 20 inches of the surface. Erosion hazard for the Robson component is slight for water and wind.

The Fourwheel component is a clay, well-drained, moderately deep soil. This component has a claypan at a depth of from 4 to 11 inches. Bedrock occurs at a depth of from 20 to 40 inches below the surface. Erosion hazard for the Fourwheel component is slight for water and wind.

3. Watershed

The watershed of the proposed reservoir consists of a mixture of Wyoming big sagebrush/bunchgrass and low sagebrush/bunchgrass in a low to mid-seral condition with stable soils. Crested wheatgrass seedings adjacent to the proposed reservoir provide for the capture and release of precipitation and snowmelt preventing erosion.

4. Wildlife

The area surrounding the proposed project area is yearlong habitat for mule deer and pronghorn antelope, large numbers of which graze the crested wheatgrass and Sandberg bluegrass in the early spring. Canada geese also graze in the crested wheatgrass seeding; chukar partridge are common along the Bridge Creek Canyon; and Greater sage-grouse are known to use the affected area. A strutting ground is located within 1½ miles of the proposed reservoir site.

Raptors using the area include golden eagles, prairie falcons, ferruginous hawk (BLM sensitive species), and Swainson's hawk.

5. Fisheries

The affected segment of Bridge Creek supports a recreational trout fishery and is habitat for redband trout and Malheur mottled sculpin. Although these fish are considered Special Status species, they are not protected under the Endangered Species Act.

6. Livestock Grazing Management

The affected area is in the Lower Pasture of the Mud Creek Allotment. Hammond Ranches, Inc., is the livestock permittee and runs two different herds of cattle through this allotment on the way up to summer range in the private School Section Pasture and the Hardie Summer Allotment.

The Lower Pasture is grazed lightly on odd years from May 16 to May 30 and heavier on even years from May 16 to June 15. The grazing system is designed to periodically rest native vegetation in the Upper Pasture and graze the crested wheatgrass seeding in the Lower Pasture early each year to provide palatable forage for mule deer.

7. Recreation and Visual Resources

The Mud Creek Allotment receives light recreation use, with most use being made in the fall by big game hunters and chukar hunters. People fish Bridge Creek and Grandad Reservoir from spring through fall. The only vehicle access is through the Malheur National Wildlife Refuge.

This area is in a Visual Resource Management (VRM) Class II area; management activities may be seen but should not attract the attention of the casual observer.

The proposed reservoir site is located in the bottom of an ephemeral creek drainage. The top of the proposed dam would be approximately 30 feet below the crests of the drainage side slopes. The area is visually dominated by big sagebrush and scattered juniper trees on a west facing, open gentle slope. Rock outcrops are exposed on the side slopes of the drainage.

The scenery at the water gap that would be abandoned is 200 feet below the rims of the Bridge Creek Canyon. The south canyon wall is a moderately steep slope covered with big sagebrush and scattered juniper trees. Large boulders have broken off the rims and scattered on the slopes while the north canyon wall is dominated by sheer rock walls with narrow ledges. The creek is flanked by patches of alders and willows interspersed with green grasses, sedges, and forbs.

CHAPTER IV. ENVIRONMENTAL CONSEQUENCES

A. Proposed Action Alternative

Critical Elements

1. Noxious Weeds

There is a potential for noxious weeds to become established in areas of surface disturbance and the proposed earthen dam. Equipment used for reservoir and fence construction would be based at BLM, Burns.

To prevent introduction of noxious weed seed to the project area, this equipment would be cleaned of vegetative material (seed, debris, etc.) before working on-site.

Soils disturbed by reservoir building operations would be seeded to a mixture of native and adaptive perennial grasses to deter establishment of noxious weeds.

Noxious weeds would be controlled in accordance with the Burns District Office weed management plan.

2. Wetlands and Riparian Zones

The proposed action to build a section of fence to block livestock access to a water gap in Bridge Creek would affect the riparian zone along that segment of the creek. Livestock utilization of woody and hydric species of vegetation would be eliminated on the affected segment of the creek and streambanks would not become broken down by livestock going to water.

3. Wilderness and Wilderness Study Areas

The proposed action would enhance wilderness values in the Bridge Creek WSA. Abandonment of the water gap would enable the two sections of wire fence that cross the creek to be removed, improving wilderness values.

The proposed reservoir and proposed section of wire fence along the Bridge Creek Canyon are not in a WSA, therefore, have no effects.

Noncritical Elements

1. Vegetation/Range

Under the proposed action there would be a temporary loss of vegetative cover in the borrow areas where the material for the proposed dam would be removed by a scraper. Vegetation would be disturbed by construction activity from the dozer and wheeled vehicles at the proposed reservoir site as well as along the proposed fenceline, by cross-country wheeled vehicle traffic. Although no brush blading would be allowed along the proposed fenceline, hand grubbing would.

2. Soils

The soils in the affected area are slightly prone to erosion. Minor erosion could occur at the proposed reservoir site on the dam and the borrow area. These disturbed areas would be seeded to adaptive perennial grasses to minimize wind and water erosion.

Cross-country vehicle traffic during all phases of reservoir and fence construction could cause soil compaction. Compaction would be minimized by using the same routes and driving closely parallel to the fenceline.

3. Watershed

The proposed action should slightly improve the watershed. The proposed reservoir would allow soil particles to settle out of impounded water during periods of runoff reducing sediment load in Bridge Creek. Increased water infiltration may also occur by retention of runoff.

A 300-yard segment of Bridge Creek would improve as a result of removal of livestock from the water gap which should allow cover by woody species and/or sedges to increase and protect streambanks and dissipate energy during high flows.

4. Wildlife

Mule deer and pronghorn antelope would benefit from an additional water source in the upland. The proposed one-quarter mile of wire fence would impede but not prohibit deer and antelope from crossing the fence. The bottom wire would be smooth and at least 16 inches above the ground to allow antelope to crawl under the fence. The top wire would be no more than 42 inches above the ground to allow deer to jump over the fence.

An increase in riparian cover in the abandoned water gap would improve habitat for deer, small mammals, perching birds, chukar partridge, waterfowl, reptiles, and amphibians.

An estimated 10 to 12 acres of canyon side and upland between Bridge Creek and the proposed fence would be restricted from grazing by livestock. This would provide thicker upland cover for chukar partridge and Greater sage-grouse.

5. Fisheries

Cover and shading should increase in the affected segment of Bridge Creek, and any cut banks may stabilize several years after abandoning the water gap. These changes would improve fisheries by buffering water temperature, deepening the channel, creating undercut streambanks, and causing a slight increase of invertebrate prey species.

6. Livestock Grazing Management

Implementation of the proposed action would cause livestock to make greater utilization of the crested wheatgrass seeding in the uplands of the west end of the Lower Pasture. Less utilization would be made in the riparian area of the affected water gap and there would be less chance of unauthorized livestock use in those sections of Bridge Creek Canyon closed to livestock grazing.

7. Recreation and Visual Resources

Under the proposed alternative, the one-quarter mile increase of wire fence on the south side of Bridge Creek Canyon could be a minor inconvenience to hunters. Removing the water gap across Bridge Creek could improve access for hunters and fishermen. The proposed reservoir might provide opportunities to hunt for upland birds, waterfowl, and big game.

Building the reservoir would add a solid trapezoidal block to the landscape and the new section of fence would add short vertical elements. The water gap landscape would be changed through the removal of short vertical elements and the regrowth of the riparian vegetation. Class II VRM objectives would be met.

B. No Action Alternative

Critical Elements

1. Noxious Weeds

Under this alternative there would be no reservoir or fence construction activities. Therefore, no opportunity is created for noxious weeds to be established in disturbed soils.

The water gap in Bridge Creek would remain in place. Livestock grazing and resulting soil disturbance and streambank erosion would continue.

Noxious weeds would continue to increase in the Bridge Creek riparian area.

2. Wetlands and Riparian Zones

The water gap would remain in Bridge Creek Canyon and livestock would continue to be able to access the lower water gap. Livestock would continue to impact the riparian area within the water gap through grazing riparian forage species and trampling streambanks.

3. Wilderness and Wilderness Study Areas

There would be no improvement of wilderness characteristics in the Bridge Creek WSA. Five creek fenceline crossings in WSA would remain as compared with three fenceline creek crossings if the proposed alternative was enacted.

Noncritical Elements

1. Vegetation/Range

There would be no change in effects on upland vegetation/range. Herbaceous and woody riparian vegetation would continue to be affected by livestock grazing in the lower water gap on Bridge Creek.

2. Soils

There would be no change in effects on upland soils.

3. Watershed

Spring runoff would continue to carry sediments from the watershed above the proposed reservoir site into Bridge Creek. Livestock use in the water gap in Bridge Creek would continue, causing sediment load during the grazing season from streambank trampling. Compaction of wet soils along a 300-yard section of Bridge Creek would continue to damage the root mass of soil retaining vegetation.

4. Wildlife

No additional source of water would be developed in the uplands south of Bridge Creek. There would be no increase in cover in the 300-yard reach of Bridge Creek because the water gap would remain. No increase in upland vegetative cover would occur on the 10 to 12 acres of canyon side and upland because there would be no new fence to restrict the movement of livestock into the water gap in Bridge Creek Canyon.

5. Fisheries

No improvement in habitat for redband trout and Malheur mottled sculpin would occur in the 300-yard reach of Bridge Creek.

6. Livestock Grazing Management

No improvement in livestock distribution in the uplands of the Lower Pasture would occur. Livestock in the lower water gap on Bridge Creek could be inadvertently herded through the water gap fences by hikers or fishermen which has caused unauthorized livestock grazing in the past.

7. Recreation and Visual Resources

Recreationists would continue to have to climb the two water gap fences or go through the gates.

There would be no change to visual resources; Class II VRM objectives would continue to be met.

CHAPTER V. CUMULATIVE EFFECTS

Cumulative effects are impacts to the environment which result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time.

A. Proposed Action Alternative

The allotment has approximately 14 miles of existing fences and 11 reservoirs.

This equates to a 1.8 percent increase in total miles of existing fence in the allotment. The addition of one-quarter mile of new fence and a one-half acre reservoir, along with removal of two creek-spanning fences, have a minor cumulative impact.

Removal of livestock grazing from the 300-yard section of Bridge Creek, as a result of construction of the proposed reservoir and fence, would enhance aquatic and terrestrial wildlife species. The expected increase of woody vegetation and reduction in streambank erosion would improve downstream water quality on public land managed by the BLM and the Malheur National Wildlife Refuge. Removal of two short livestock fences across Bridge Creek would improve wilderness characteristics and improve access for recreation use.

There would be no cumulative effects to the critical or noncritical elements as a direct result of construction of the proposed projects.

B. No Action Alternative

There would be no cumulative effects in the critical or noncritical elements as a direct result of implementation of the no action alternative.

Without the development of the proposed projects, a 300-yard stretch of Bridge Creek would continue to serve as a water gap for livestock. Suppression of woody riparian vegetation and streambank trampling would continue. There would be no improvement of wilderness characteristics in the Bridge Creek WSA.

CHAPTER VI. CONSULTATION AND COORDINATION

Jacquelyn Bonomo, National Wildlife Federation
Conservation Director, Audubon Society of Portland
Honorable Steve Grasty, Harney County Judge
Dwight Hammond, Hammond Ranches, Inc.
Jim Lemos, Oregon Department of Fish and Wildlife
Dave McAllister, Oregon Department of Fish and Wildlife
Monty L. Montgomery, Izaak Walton League
Geoff Pampush, Oregon Trout
Eldon Smith, Trout Unlimited
Dave Stanbrough, Malheur National Wildlife Refuge

CHAPTER VII. LIST OF PARTICIPANTS

Darren Brumback, Fisheries Biologist/Water Quality
Mary Emerick, Wilderness Specialist
Gary Foulkes, Planning and Environmental Coordinator
Terri Geisler, Geologist
Rick Hall, Botany/Natural Resource Specialist
Matt Obradovich, Wildlife Biologist
Lesley Richman, Noxious Weed Specialist
Joan Suther, Natural Resource Staff Supervisor
Laurie Thompson, Archaeologist
Evelyn Treiman, Outdoor Recreation Planner
Dave Ward, Rangeland Management Specialist/Preparer